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TWO NEW SPECIES OF SALDIDAE (HEMIPTERA)
FROM WESTERN UNITED STATES

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The present paper contains the descriptions of two new species and notes on allied species of shore bugs from western United States. The types are in collection of C. J. Drake. Paratypes are in the collections of U. S. National Museum, Museum of Comparative Zoology (Harvard) and authors. The drawings of the right parameres were made by F. C. Hottes. *Saldula ourayi*, n. sp., is named in memory of the famous Indian Chief Ouray, who was a sincere friend of the pioneers and early settlers of the Rocky Mountain region.

Saldula andrei Drake

Saldula andrei Drake, Ark. Zool., 42B(3). 1949.

The type specimens of *S. andrei* were collected in New Mexico and Arizona. During August and September, 1937, specimens were taken by the authors in Colorado (Gateway; Telluride, Trout Lake; Palisades; Skyway; Georgetown; Delta; and Grand Junction), Utah (Green River and Logan), Idaho (Lewiston and Twin Falls), Washington (Spokane), and Wyoming (Jackson Lake), and Canada (Cranbrook, Br. Col.). The right paramere of a male from Grand Junction, Colo., is figured.

S. andrei is about the same size and shape as *S. azteca*, n. sp., but the two species may be easily separated by color as pointed out under the description of the latter. Both are largely stone- or rock-resting species and are taken only sparingly on muddy or sandy beaches near stony areas of streams and lakes. Specimens have also been collected while resting on drift wood near the edge of the water.

In markings and color pattern, *andrei* more closely resembles *S. confluenta* Say of the eastern and central states, but it is readily separated from the latter by its smaller size, slenderer form, much narrower basal portion of the hemelytra and dull corium. *S. confluenta* has a longer, paler and slenderer antennae, the second segment being longer than the next two taken together. The frontal callosities are much less swollen and tend to be brown or blackish in color. Also, the entire hemelytra tend to be shining. Both species have a vesture of long hairs.

Saldula azteca, n. sp.

Moderately large, elongate-ovate, black, clothed with nearly erect, short golden pubescence and very long, fine, erect or slightly reclining posteriorly, black hairs, the hairs larger and more conspicuous along outer

margins of pronotum and basal portion of hemelytra. Head, pronotum and scutellum deep black, shining, highly polished. Hemelytra black, velvety-like, not shining, lighter in color than pronotum; embolium deep black, shining, as dark and as highly polished as pronotum, wide, becoming wider and a little reflexed anteriorly; clavus and corium rather dull, much lighter in color than scutellum, the clavus with or without subapical pale spot; corium usually with two to four small, rounded yellowish white spots, occasionally without any spots; outer corium usually with a large subapical yellow-white spot and inner corium often with two smaller pale spots (spots variable in size); membrane fumose, subhyaline, clouded with dark brown within at base, with four cells, each cell with a brown or fuscous streak; veins dark brown, prominent.

Head with a few bristly hairs in front, the clypeus, juga and transverse ridge beneath eyes yellowish white, sometimes brownish or even black; a small pale spot between each eye and ocellus. Rostrum dark ferruginous, shining, with terminal segment paler, extending to middle of hind coxae. Antennae dark brown, moderately pilose, with a few long scattered bristly hairs on last two segments; segment I yellowish white, with a large elongate black spot, sometimes almost entirely black; proportions—I, 16; II, 36; III, 21; IV, 20. Body beneath black, densely clothed with silvery gray pile. Legs black, with variable degrees of brownish markings sometimes almost entirely black, clothed with long grayish hairs, beneath much darker, shining and with longer hairs; femora with long brownish stripe in front, much widened at apices; tibiae often brownish beneath, sometimes quite brownish apically, with usual brownish spines; tarsi with second and often most of third segments brownish or testaceous. Pronotum nearly three times as wide at base as median length, strongly convergent anteriorly, narrower in front than head and eyes taken together, the lateral margins moderately explanate, slightly reflexed, nearly straight; callus with large discal impression, moderately swollen, not extending on explanate margins of pronotum; transverse furrow sinuate, deep, pitted at the bottom, the hind lobe deeply, broadly excavated behind, about one-half as long as the front lobe and two-thirds as long as callus; scutellum about as long as wide, the impression placed just in front of the middle. Pubescence not as dense on hemelytra as on pronotum and scutellum.

Length, 4.00 to 5.10 mm.; width, 1.90 to 2.25 mm.

Type (male), allotype (female) and 6 paratypes, Aztec, New Mexico, Aug. 26, 1934, taken on stones, C. J. Drake and Floyd Andre. Paratypes, 60 specimens, taken by the authors during August to October, 1949 in Colorado (Delta, Gateway, Skyway, Grand Junction, Georgetown, Ridge-way, Grand Masa and Telluride), Utah (Green River, Salt Lake City and Logan), Idaho (Twin Falls and Lewiston), Washington (Spokane), Wyoming (Jackson Lake and Rocksprings) and Canada (Coleman, Alberta).

S. azteca, n. sp., is primarily saxicolous, and most frequently taken resting on rocks and stones in very stony situations near the edge of water of streams and lakes. It is rarely taken on sand or wet mud, even near stony places. Some specimens were also collected on drift wood near the later.

Other shore bugs taken on stones in the same habitats were *Saldula nigrita* (Parshley), *S. explanata* (Uhler), *S. andrei* Drake. *Azteca* seems

to be more closely associated with the stony habitats than the other species. It was also dominant in numbers.

S. comatula (Parshley) is a larger, broader species and rather dull; the hemelytra are very variable in color and its legs are pale. *S. andrei* Drake is quite similar in size and form, but also has pale legs, and large prominent yellowish or yellowish orange markings on the hemelytra. The color and markings also separate it from *comatula*. *S. illinoiensis* Drake is a smaller species, with rather sparse vesture of long hairs; the hemelytra have a moderately large, pale, subapical, marginal spot in the corium.

Saldula ourayi, n. sp.

Small, obovate, black, with or without small, luteous or whitish markings or small rounded spots, the pubescence short, dense, dark golden; without vesture of long hairs. Head with a small pale spot between each eye and ocellus, the transverse callosities beneath eyes, clypeus and often juga yellowish white, swollen; rostrum ferruginous, shining, reaching end of hind coxae. Antennae brownish black, shortly pilose, the first segment yellowish white, usually with a large elongate black spot, the second brownish apically, the two terminal segments with a few scattered bristly hairs; proportions—I, 12; II, 25; III, 14; IV, 15. Pronotum deep black, slightly shining, indistinctly pitted, deeply excavated behind, three times as wide at base as median length, not strongly narrowed anteriorly, the side margins slightly rounded and slightly reflexed; callus moderately swollen, not extending on explanate margins, with large, deep impression at middle; lobes separated by rather shallow arcuate furrow, finely pitted at bottom, the hind lobe about three-fourths as long as callus. Scutellum about as wide as long, deep black, slightly shining, indistinctly pitted, the pubescence of pronotum and scutellum slightly longer than on hemelytra.

Hemelytra black, rather dull; clavus usually without subapical pale spot; corium usually with two or four small, whitish or yellowish, rounded, small spots, often with a narrow, marginal, luteous stripe, the stripe often longly interrupted at middle; sometimes entire corium black and with only two small pale spots; membrane densely clouded with fuscous, non-transparent, with four cells, the veins a little darker; usually without dark spots in cells. Legs black, generally with some brown or fuscous markings, sometimes entirely black. Body beneath black, with dense grayish pile. Hemelytra slightly variable in length.

Length, 3.50 mm.; width, 1.62 mm.

Type (male), allotype (female) and 70 paratypes, Soap Lake, Washington, and series of lakes to the north to Deep Lake, Washington, Aug. 29, 1949, C. J. Drake and F. C. Hottes. Paratypes also from Colorado (Georgetown, Gateway and Delta), Idaho (Lewiston), Wyoming (Jackson Lake and Yellowstone National Park), Utah (Green River), California (San Francisco, Aug. 26, 1934, Drake and Andre), and Canada (Cranbrook, Brit. Col.).

Allied to *S. bassingeri* Drake, but easily separated by its larger size, darker color and different markings on hemelytra and dark legs. It was taken on the muddy and sandy shores of lakes and reservoirs of rivers. Soap Lake and the series of lakes north to Deep Lake are the only places where it was taken in large numbers. *S. pallipes* (Fabr.), *S. saltatoria* (Fabr.), and *S. comatula* (Parsh.) were often found in the same habi-

tats. At Deep Lake, 8 specimens of *Micracanthia pusilla* Van Duzee were taken at one small point in company with *ourayi* and *pallipes*. A few specimens of *S. ourayi* are conspicuously marked with two large flavous areas on each hemelytron, and might represent a distinct variety. The right paramere of a paratype from Soap Lake is figured. The parameres of *S. ourayi* differ distinctly in shape from those of *S. bassingeri* Drake. The hair on the hump of the parameres of *bassingeri* are much longer than those on the hump of the parameres of *ourayi* and from a distinct tuft.

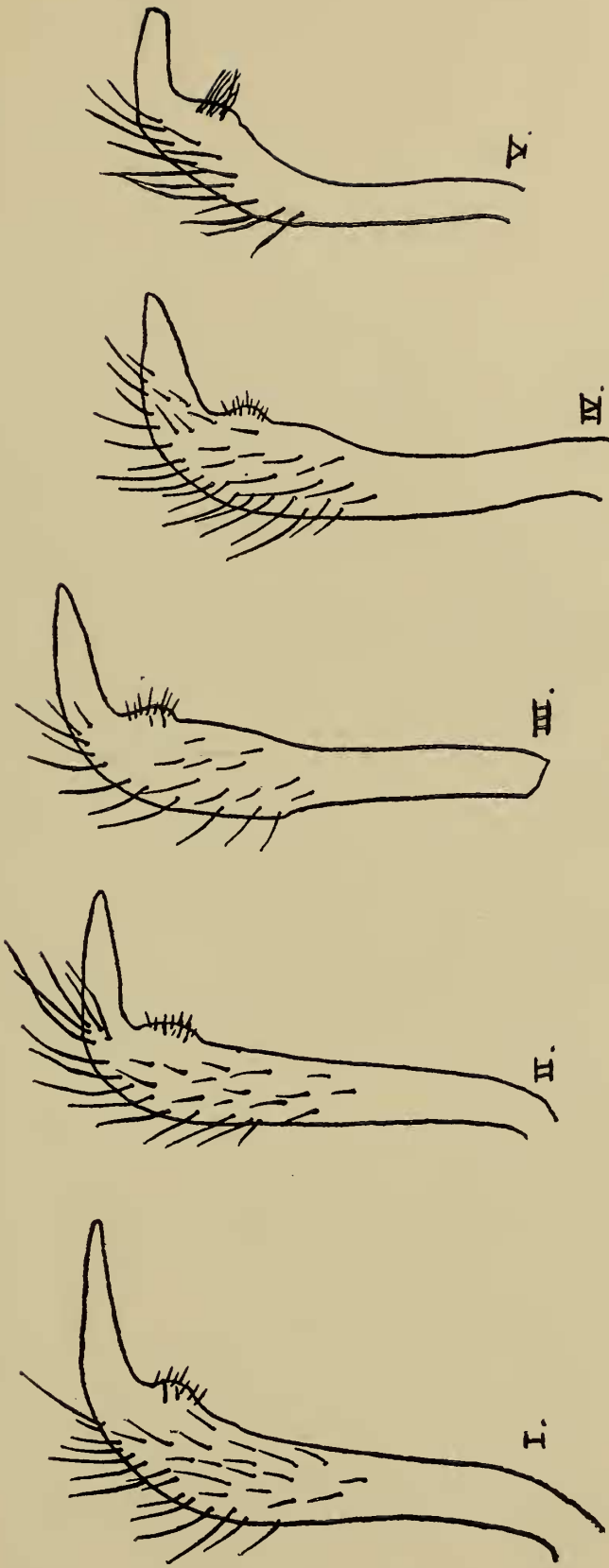


PLATE X

- I. *Saldula comatula* (Parsh.)
- II. *Saldula andrei* Drake.
- III. *Saldula azteca*, n. sp.
- IV. *Saldula ourayi*, n. sp.
- V. *Saldula bassingeri* Drake.